Potable Water Hauler Guidelines

NOVA SCOTIA
Environment and Labour

Approval Date: June 25, 2005 Effective Date: June 15, 2005

Approved By: William GR Lahey

Version Control:	Replaces Guidelines for Water Haulers, dated April 5, 1990, issued by the Department of Health and previous guidelines issued by Boards of Health Latest Revision: June 28, 2005 - administrative amendments

The Potable Water Hauler Guidelines are intended to serve as instructions for the safe collection, transport and discharge of water from acceptable sources and specifies "best practices" for equipment, methods, testing, records and notification relating to the bulk delivery of potable water to wells or storage tanks for potable domestic, commercial or institutional purposes.

1.0 Definitions

1.1 **bulk delivery** means transportation of potable water in a water tank which is fixed to a tanker truck, and which is filled at the source and delivered to water wells and storage tanks at one or more destinations within Nova Scotia;

1.2 **department** means Nova Scotia Environment and Labour;

1.3 **household bleach** means sodium hypochlorite solution acceptable for potable water use that does not contain algicides, perfumes or other additives;

1.4 **inspector** means an inspector appointed pursuant to the provisions of the *Environment Act*;

1.5 **potable water** means water from a municipal water supply which holds a valid approval from the department or public drinking water supply that is registered with the department and is monitored and tested in accordance with the requirements of the *Water and Wastewater Facility Regulations*.;

1.6 **potable water hauler** means a water hauler that has obtained a Certificate of Qualification from the department;

1.7 **tanker truck** means a vehicle constructed or modified and used for the purpose of bulk potable water delivery;

1.8 **water tank** means the container which is mounted on the tanker truck for the purpose of containing the bulk potable water during delivery; and

1.9 **waterworks** means all equipment required to deliver water from the water source to the tanker truck fill point.

2.0 GENERAL

2.1 The water tank shall be disinfected and filled with water from an acceptable source only. The acceptable source shall be a municipal water supply that holds a valid approval from the department, or a public drinking water supply that is registered with the department and is monitored and tested in accordance with the requirements of the *Water and Wastewater Facility Regulations*. In the event that the municipal water supply or public drinking water supply is not chlorinated, sufficient chlorine is to be added to ensure that a minimum of 0.4 milligrams per litre free chlorine residual is present in potable water contained in the water tank.

2.2 The potable water hauler shall have a chlorine test kit for the purpose of measuring chlorine residuals. The potable water hauler shall be trained and tested in the accepted method(s) of adding chlorine and testing for chlorine residuals and be familiar with the material safety data sheets (MSDS).

2.3 The potable water hauler shall add sufficient chlorine to assure that there is a minimum of 0.4 milligrams per litre free chlorine residual when delivered to a user.

2.4 If a free chlorine residual, when delivered to the user, is not found in the water as per the requirements of Section 2.3, then sufficient chlorine shall be added to the water at the destination to obtain a free chlorine residual of 0.4 milligrams per litre.

2.5 There shall be no dipping into the filled water tank for the purposes of obtaining a water sample for testing purposes.

2.6 The tanker truck shall not be used to haul any materials which might have an adverse effect on the potability of the water being transported. If the tanker truck is to be used or has been used for transporting any materials other than potable water, the hauler must receive written authorization from the department.

3.0 EQUIPMENT REQUIREMENTS

3.1 Every tanker truck shall be equipped with:

3.1.1 a stainless steel water tank or a water tank of other material, conforming to the ANSI/NSF 61 standard, that has obtained prior written authorization from the department ; and

3.1.2 a clean, lockable compartment for containing and protecting hoses, nozzles and related couplers and fittings from contamination

3.2 Every water tank mounted on a tanker truck shall be equipped with an access port, suitably designed, having a minimum diameter of at least 400 mm (16 in.) and fitted with a water tight, lockable lid. The water tank shall be supplied with valves, except for the vent, that allows for the complete closure of the water tank.

3.3 All water tank vents shall be screened, and shall be configured to prevent the ingress of rainwater, insects, birds, animals and other deleterious objects.

3.4 The water tank shall be constructed such that all water can be drained out during cleaning and to prevent freezing. The water tank shall be constructed with rounded corners and a smooth surface so that the interior may be thoroughly disinfected.

3.5 Every water tank mounted on a tanker truck intended to deliver potable water shall be clearly labeled, placarded or otherwise identified with the words "POTABLE WATER" in a prominent location on the tank in weather-resistant, bold letters that allows for easy identification.

3.6 All hoses used on water tanker trucks intended to deliver potable water shall be clearly and prominently labeled, tagged or otherwise identified with the words "POTABLE WATER", in weather-resistant, bold letters. Hoses shall be fitted with caps when not in use as recommended by the hose manufacturer or stored in a secure compartment, to prevent the entry of dirt and contaminants.

3.7 All equipment which is in contact with potable water, including but not limited to hoses, valves, couplers, fittings, nozzles and pumps, shall be constructed of materials suitable for potable water use.

3.8 No equipment which is installed on a tanker truck, which is in contact with potable water, shall have been previously used for any purpose incompatible with the conveyance of potable water.

3.9 Tanker trucks, designed with bottom filled water tanks, shall be equipped with a check valve on the intake line, designed to prevent backflow from the water tank into the water source.

3.10 Tanker trucks, designed with top filled water tanks, shall ensure that an air gap is maintained between the fill pipe and the water tank at all times.

3.11 Each tanker truck shall be equipped with a chlorine testing kit capable of reading in the range of 0.1 to 3.5 mg/L (milligrams per litre) of free and total chlorine residuals, in increments of 0.1 mg/L.

3.12 Chlorine test kits, and all products required for testing, shall be replaced as recommended by the manufacturer to ensure the integrity of the test results and no test kit nor any products required for testing shall be used after the manufacturer's specified best before or expiry date.

3.13 Potable water haulers shall be trained in the use of the chlorine test kits carried on board.

4.0 STORAGE

4.1 When a tanker truck intended to deliver potable water is stored in a garage or similar structure, it and any related water delivery equipment shall be kept in an area separated from any source of contamination, including any sewage transporting equipment.

4.2 When not in use, being cleaned or drained dry:

4.2.1 delivery hoses, not intended to be stored in a secure hose compartment, should be capped at both ends or as otherwise recommended by the hose manufacturer; and

4.2.2 delivery hoses and related couplers, fittings and nozzles shall be placed in a secure hose compartment.

5.0 METHODS

5.1 All water shall be chlorinated and shall have a free chlorine residual concentration of no less than 0.4 mg/L at the time of loading into the tanker truck. A free chlorine residual concentration of greater than 0.4 mg/L at the time of loading may be required to ensure that a free chlorine residual concentration of no less than 0.4 mg/L is available at the time of delivery.

5.2 Notwithstanding the requirement to maintain a free chlorine residual concentration of no less than 0.4 mg/L at the time of delivery, water shall not be retained in a tanker truck longer than 24 hours after the time of loading. After 24 hours, any remaining water in the tank shall be drained and shall not be used as potable water.

5.3 Immediately prior to each delivery, the source fitting, delivery hose nozzle and/or coupler shall be disinfected by spraying with a solution of 15 millilitres of household bleach (5.25% sodium hypochlorite) per litre of water (2.4 ounces per Imp. gallon) using a spray bottle or other similar device.

5.4 Should the water delivery nozzle and/or coupler come into contact with the ground or any other source of contamination, it shall immediately be cleaned of debris and then disinfected by spraying with a solution of 15 ml of household bleach (5.25% sodium hypochlorite) per litre of water (2.4 oz per Imp. gallon) using a spray bottle or other device. Prior to connecting the water delivery nozzle to the source fitting, the source fitting shall be disinfected.

5.5 No less frequently than:

5.5.1 once every three months, the interior of the water tank and all water delivery equipment on the tanker truck shall be disinfected in accordance with Section 5.6 and

5.5.2 once every six months, all internal areas of the water tank and all water delivery equipment on the tanker truck shall be cleaned by scrubbing with brushes and non corrosive detergents. The water tank shall be rinsed with water from an acceptable source to remove dirt and detergent residues and disinfected in accordance with Section 5.6 of these Guidelines, or

5.5.3 once every six months, all internal areas of the water tank and all water delivery equipment on the tanker truck shall be cleaned by a pressure sprayer which provides cleaning solution with sufficient velocity to remove all dirt from the tank interior. The water tank shall be rinsed with water from an acceptable source to remove dirt and detergent residues and disinfected in accordance with Section 5.6 of these Guidelines.

5.6 Disinfection shall be carried out by adding household bleach (5.25% sodium hypochlorite) to a full tank of water from an acceptable source at a rate of one litre per 1000 litres of water (1 Imperial gallon of household bleach per 1000 Imperial gallons of water). The solution shall be discharged through the intake and delivery hoses until they are full of solution, at which time the valves shall be closed and the solution shall be left to sit in the tank and hoses for a minimum of 12 hours before draining and flushing with water from an acceptable source. The solution and rinse water shall be disposed of in a manner that does not adversely affect aquatic life or habitat.

5.7 Alternative methods of disinfection may be used, subject to written authorization in advance by the department

5.8 In addition to the regular disinfection required in Section 5.5, disinfection shall be carried out when:

5.8.1 a water tank has not been in regular use;

5.8.2 any part of the water tank or related water delivery equipment has been repaired or replaced; or

5.8.3 the sanitation of the water tank and/or delivery system is known or suspected to have been compromised

6.0 TESTING

6.1 No less frequently than once per month during months that the potable water hauler is in operation, the potable water hauler or designated representative shall:

6.1.1 collect a sample of water from the fill line and water truck delivery hose; and

6.1.2 submit the sample to an approved laboratory for bacteriological analysis. Samples shall be labeled and immediately placed in a chilled cooler for transportation to the laboratory.

6.2 Samples shall be collected according to standard sampling protocols as identified in the "Guidelines for Monitoring Public Drinking Water Supplies"

6.3 Samples submitted to an approved laboratory shall be accompanied by a completed request for bacteriological analysis form provided by the laboratory

7.0 RECORDS

7.1 Every potable water hauler shall maintain records for a minimum of two years that show the:

7.1.1 location of the source of each load of water;

7.1.2 date and time at which the water was loaded and by whom;

7.1.3 free residual chlorine concentration in the water at the time of loading and at the time of delivery;

7.1.4 address, date, time and volume of each delivery and by whom;

7.1.5 free residual chlorine concentration in the water at the time of last delivery of the load;

7.1.6 date, time and location of each equipment disinfection and, if used, the name of the cleaning compound; and

7.1.7 results of monthly bacteriological analysis, including the laboratory results

7.2 The records shall be:

7.2.1 kept at the registered address of the potable water hauler for a period of no less than two years; and

7.2.2 made available to an inspector on request

8.0 NOTIFICATION

8.1 The potable water hauler shall register with and obtain a Certificate of Qualification from the department and shall provide the following:

8.1.1 tanker truck license number;

8.1.2 name and address of owner and/or operator of the tanker truck;

8.1.3 name and address of the business including current business registration number;

8.1.4 make, model and serial number of the tanker truck;

8.1.5 technical specifications for the tanker truck, water tank and water delivery equipment such as hoses couplings, etc.;

8.1.6 photograph(s) of the tanker truck being registered;

8.1.7 water supply source(s) to be used;

8.1.8 authorization from the owner of the water supply source(s) to be used;

8.1.9 laboratory test results confirming that the proposed water supply source(s) meets the health related concentration limits for the substances listed in the current edition of the *Guidelines for Canadian Drinking Water Quality* (GCDWQ), published by Health Canada;

8.1.10 a copy of the operating procedures for filling the tanker truck, delivering the water, sampling and testing the water, disinfecting the water tank and related equipment, and storing the equipment

at the end of the operating day; and

8.1.11 the proposed water sampling and testing schedule (e.g., sample will be submitted on the 2nd week of the month).

8.2 The department is to be advised immediately, should there be any changes to the information provided.

8.3 The department is to be advised immediately, should there be any adverse water quality problems such as bacterial or chemical contamination.

8.4 An inspector shall be afforded access and may:

8.4.1 inspect or require, at the owner's cost, the inspection of the tanker truck, water tank, water delivery equipment such as hoses couplings, etc. and the water supply source by an independent contractor or engineer;

8.4.2 review relevant documentation;

8.4.3 carry out such testing as may be required to confirm compliance with these guidelines; and

8.4.4 require such additional information, as may be appropriate.

Dated: June 25, 2005

original signed by
William GR Lahey
Deputy Minister